

## **REMARKS**

Claims 39-78 are pending on the merits. In the Office Action, each of those claims has been rejected. For at least the reasons outlined in more detail below, Applicant respectfully requests reconsideration and withdrawal of all of the claim rejections.

### **I. Claim Rejection under 35 U.S.C. § 112, Second Paragraph**

The Office has rejected claims 39-66 and 73-77 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite, asserting that “[i]t is not clear what is included by the claimed ‘sub-effective amount,’” and further, that “[t]he specification does not provide any guidance to determine its meaning.” Office Action at 2.

Applicant respectfully traverses the § 112, second paragraph, claim rejection. As has been well established, an Applicant is entitled to be his own lexicographer and “can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification.” M.P.E.P. § 2173.01. “In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.” Id. at § 2173.02.

Applicant respectfully submits that the specification has provided a definition of the term, “sub-effective amount,” and further, that a person having ordinary skill in the

art would be apprised of the scope of claims reciting this term based, at least in part, on that definition. In particular, the specification of the present application at page 3, lines 6-10, defines "sub-effective" as an "amount . . . not sufficient to give rise to deflocculation of the particulate inorganic material, so that the flocculation characteristics are substantially the same as would be found in the complete absence of any dispersant." This definition would clearly be understood by one of ordinary skill in the art for any combination of dispersants and inorganic particulate materials.

As outlined in the specification, the amount of dispersant necessary to deflocculate inorganic particulate materials may vary with the type of dispersant used and the type of particulate material to be dispersed. It would be well within the scope of one of ordinary skill in the art, however, to vary the amounts of those materials to achieve the effect provided by the exemplary embodiments of the present invention. See, e.g., Specification at p. 6, lines 27-32; p. 7, lines 1-2. Moreover, Applicant respectfully submits that one of ordinary skill in the art would be readily able to determine whether flocculation has occurred for a given aqueous suspension, and what amount of dispersant would "not [be] sufficient to give rise to deflocculation of the particulate inorganic material, so that the flocculation characteristics are substantially the same as would be found in the complete absence of any dispersant."

For at least the above-outlined reasons, Applicant respectfully submits that the use of the term, "sub-effective amount," is both clear and definite, such that it would apprise one of ordinary skill in the art of the scope of the claims. Therefore, Applicant

respectfully requests reconsideration and withdrawal of the claim rejection under 35 U.S.C. § 112, second paragraph.

**II. Claim Rejection under 35 U.S.C. § 102(e) based on Suau**

The Office has rejected claims 39-40, 43, and 48 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Pat. App. Pub. No. 2003/0045647 to Suau et al. ("Suau"). Claim 39 is the only independent claim included in that claim rejection, and Applicant respectfully traverses the rejection of independent claim 39 under § 102(e) based on Suau because Suau fails to disclose all of the subject matter recited in that claim.

According to the M.P.E.P., a patent is anticipated under 35 U.S.C. § 102 "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (citation omitted). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Id. (citation omitted).

Applicant's independent claim 39 is directed to a method of grinding an inorganic particulate material in an aqueous suspension, the aqueous suspension including, *inter alia*, "a sub-effective amount of at least one dispersant for the inorganic particulate material." Suau fails to disclose or render obvious at least this subject matter recited in independent claim 39.

The Office asserts that Suau discloses "grinding mineral particles, including calcium carbonate, in aqueous suspensions containing dispersing agents . . . , such as

acrylates," and further, that "[a]bout 0.3-1.0% by dry weight of the mineral particles is preferably employed in the aqueous suspension . . . ." Office Action at 3.

Applicant respectfully submits that, contrary to the Office's assertion, Suau does not disclose a method of grinding an inorganic particulate material in an aqueous suspension comprising at least one dispersant, as recited in independent claim 39. While Suau may disclose the use of water soluble polymers as dispersing agents, it does not teach or suggest the use of such dispersants during grinding. Rather, Suau discloses the use of dispersant after grinding. See, e.g., Abstract, ¶¶ [0007]-[0008]. Indeed, Suau expressly discloses that the step of wet grinding is conducted "without the use of a dispersant." Id. For at least this reason, Suau fails to disclose or render obvious all of the subject matter recited in independent claim 39.

In addition, Suau also fails to disclose the use of dispersants in a "sub-effective amount," as recited in independent claim 39. In fact, the Office appears to have either overlooked or ignored this subject matter recited in Applicant's independent claim 39, since the rejection statement does not attempt to explain how Suau purportedly discloses grinding in an aqueous suspension including "sub-effective amounts" of dispersants.

As outlined previously herein, the meaning of the term, "sub-effective amount," as used in the claims of the present application, is both clear and definite, and thus it must be considered in a proper judgment of the patentability of the pending claims with respect to the prior art. Under well settled law, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P.

§ 2143.03 (citation omitted) (emphasis added). Furthermore, the M.P.E.P. advises that "a claim limitation which is considered indefinite cannot be disregarded." § 2143.03(I). Therefore, Applicant respectfully submits that the Office has improperly either overlooked or ignored the recitation of the term, "sub-effective amount," as recited in the claims of the present application, including independent claim 39.

Even if the Office had properly considered the term, "sub-effective amount," Applicant respectfully submits that Suau fails to disclose or render obvious at least this subject matter. Thus, for at least this additional reason, Applicant's independent claim 39 is patentably distinguishable from Suau.

For at least the above-outlined reasons, Applicant respectfully submits that Suau fails to disclose or render obvious all of the subject matter recited in independent claim 39. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 39 under § 102(e) based on Suau.

Since the present Office Action fails to analyze at least the recited "sub-effective amount" subject matter with respect to the prior art, Applicant respectfully requests that, if after the Office considers this Request, the Office decides not to issue a Notice of Allowance, that the Office explain how the prior art purportedly discloses or renders *prima facie* obvious this subject matter. Further, Applicant also respectfully requests that an Office Action including a claim rejection providing such an explanation be designated non-final, so that Applicant will be provided with a fair opportunity to respond appropriately.

**III. Claim Rejection under 35 U.S.C. § 103(a) based on Mortimer and Engraz**

Claims 39-49 and 51-77 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious based on U.S. Patent No. 6,620,856 to Mortimer et al. ("Mortimer") in combination with U.S. Patent No. 5,432,239 to Engraz et al. ("Engraz"). Claims 39 and 67-69 are the only independent claims included in this claim rejection, and Applicant respectfully submits that none of those independent claims is *prima facie* obvious based on Mortimer and Engraz, regardless of whether those claims are viewed individually or as a whole.

Applicant respectfully submits that obviousness under 35 U.S.C. § 103 must be determined based on the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). These inquiries include (1) the scope and contents of the prior art; (2) differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. *Graham*, 383 U.S. at 16-17, 148 U.S.P.Q. at 467; *see also KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 U.S.P.Q.2d 1385, 1391 (2007) (advising that "the [*Graham*] factors continue to define the inquiry that controls.").

According to the M.P.E.P., the Office must consider each prior art reference "in its entirety, i.e., as a whole, including portions that would lead away from the claimed inventions." M.P.E.P. § 2141.03(VI) (citing *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983) (emphasis in original)). Moreover, the Supreme Court has recently confirmed the well-settled doctrine that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co.*, 127 S.Ct. at

1741, 82 U.S.P.Q.2d at 1396. Implementing this doctrine, the M.P.E.P. advises that if the modifications to a prior art reference result in “chang[ing] the principle of operation of the prior art [reference,] then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” M.P.E.P. § 2143.02(VI) (citation omitted).

As outlined in more detail below, Applicant respectfully submits that independent claims 39 and 67-69 are not *prima facie* obvious at least because (1) the Office has failed to articulate proper findings of fact with respect to the subject matter recited in the claims and disclosed in the prior art, (2) the Office has failed to articulate any rationale about why the differences between the prior art and the subject matter recited in the claims would have purportedly been obvious to a person having ordinary skill in the art, and (3) Mortimer teaches away from the Office’s hypothetical modification to Mortimer as outlined in more detail below.

#### **A. Independent Claim 39**

Applicant’s independent claim 39 is directed to a method of grinding an inorganic particulate material in an aqueous suspension, the aqueous suspension including, *inter alia*, “a sub-effective amount of at least one dispersant for the inorganic particulate material.” Applicant respectfully submits that Mortimer and Engraz fail to disclose or render *prima facie* obvious a method of grinding in an “aqueous solution comprising a sub-effective amount of at least one dispersant,” as recited in independent claim 39.

Although the Office makes a number of assertions about what Mortimer and Engraz purportedly disclose, the Office appears to have overlooked or ignored grinding

in aqueous suspension comprising “a sub-effective amount” of dispersants, since the rejection statement does not attempt to explain how either Mortimer or Engraz purportedly discloses or renders *prima facie* obvious at least this subject matter recited in independent claim 39. As outlined previously herein, the meaning of the term, “sub-effective amount,” as used in the claims of the present application, is both clear and definite, and it must be considered in a proper judgment of the patentability of the pending claims with respect to the prior art. For at least this reason, Applicant respectfully submits that the Office has failed to conduct and articulate proper findings of fact with respect to the subject matter recited in the claims and the content of the prior art.

At least because the Office has failed to articulate proper findings of fact regarding how Mortimer and Engraz purportedly disclose at least the “sub-effective amount” subject matter, the Office has failed to establish a *prima facie* case of obviousness. See M.P.E.P. § 2141(II). Moreover, the Office has also failed to articulate why this difference between the prior art and the subject matter recited in independent claim 39 would have purportedly been obvious to a person having ordinary skill in the art based on Mortimer and Engraz. For at least this additional reason, the Office has failed to establish a *prima facie* case of obviousness. See id. at § 2141(III).

Even if for the sake of argument, the Office articulated proper findings of fact and why the differences between the prior art and the subject matter recited in independent claim 39 would have purportedly been obvious to a person having ordinary skill in the art, the subject matter recited in independent claim 39 is not *prima facie* obvious at least



because the Mortimer reference itself teaches away from a modification to include grinding in an aqueous suspension including a sub-effective amount of dispersant. Mortimer does not teach the use of dispersants in a grinding step. To the extent that Mortimer teaches the use of dispersants in methods other than grinding, Mortimer teaches away from using a "sub-effective amount" of dispersant during grinding, by stating that the amount of dispersant is to be "effective." (Col. 3, line 67, through col. 4, line 4). Moreover, no disclosure in Engraz remedies the above-noted distinctions or suggests that a dispersant in a "sub-effective amount" should be used in a method of grinding an inorganic particulate material.

For at least the above-outlined reasons, Applicant respectfully submits that independent claim 39 is not *prima facie* obvious based on Mortimer and Engraz, regardless of whether those references are viewed individually or as a whole. Therefore, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of independent claim 39 based on those references.

#### **B. Independent Claim 67**

Independent claim 67 is directed to "[a]n aqueous suspension of a ground inorganic particulate material comprising a sub-effective amount of a dispersant . . . ." For at least the reasons outlined above with respect to the § 103(a) rejection of independent claim 39 based on Mortimer and Engraz, those references, regardless of whether they are viewed individually or as a whole, fail to disclose or render *prima facie* obvious "a sub-effective amount" of dispersant in an aqueous suspension of ground

inorganic particulate material. For at least this reason, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of independent claim 67 based on those references.

**C. Independent Claim 68**

Applicant's independent claim 68 is directed to an aqueous suspension of a ground particulate material . . . prepared by "a method of grinding an inorganic particulate material in an aqueous suspension . . . compris[ing] a sub-effective amount of at least one dispersant . . . ." For at least the reasons outlined above with respect to the § 103(a) rejection of independent claim 39 based on Mortimer and Engraz, those references, regardless of whether they are viewed individually or as a whole, fail to disclose or render *prima facie* obvious an aqueous suspension prepared by a method of grinding, including "a sub-effective amount" of dispersant. For at least this reason, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of independent claim 68 based on those references.

**D. Independent Claim 69**

Applicant's independent claim 69 is directed to an aqueous suspension, "wherein said aqueous suspension is prepared by a method of grinding . . . in an aqueous suspension . . . comprising a sub-effective amount of at least one dispersant . . . ." For at least the reasons outlined above with respect to the § 103(a) rejection of independent claim 39 based on Mortimer and Engraz, those references, regardless of whether they

are viewed individually or as a whole, fail to disclose or render *prima facie* obvious an aqueous suspension prepared by a method of grinding, including “a sub-effective amount” of dispersant. For at least this reason, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of independent claim 69 based on those references.

**IV. Rejection of Claim 50 under § 103 based on Mortimer, Engraz, and Nagaraj**

Claim 50 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious based on Mortimer in combination with Engraz and U.S. Pat. App. Pub. No. 2001/0022282 to Nagaraj et al. (“Nagaraj”). Claim 50 depends from allowable independent claim 39. For at least this reason, dependent claim 50 should be allowable. Further, Nagaraj fails to overcome the above-outlined deficiencies of Mortimer and Engraz. For at least those reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection of dependent claim 50 under 35 U.S.C. § 103(a) based on Mortimer, Engraz, and Nagaraj.

**V. Rejection of Claim 78 under § 103(a) based on Mortimer, Engraz, and Leighton**

Claim 78 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious based on Mortimer in combination with Engraz and U.S. Patent No. 4,915,845 to Leighton et al. (“Leighton”). Claim 78 is an independent claim, and Applicant traverses its rejection for reasons similar to those outlined above with respect to the rejection of independent claims 39 and 67-69.

Applicant's independent claim 78 is directed to "[a] process of inhibiting corrosion . . . comprising the addition of a sub-effective amount of at least one dispersant . . . as a corrosion inhibitor in a low solids aqueous suspension." For at least the reasons outlined above with respect to the § 103(a) rejection of independent claim 39 based on Mortimer and Engraz, Mortimer and Engraz, regardless of whether they are viewed individually or as a whole, fail to disclose or render *prima facie* obvious "a sub-effective amount" of dispersant in an aqueous suspension. Further, Leighton fails to overcome the deficiencies of Mortimer and Engraz. For at least this reason, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of independent claim 78 based on Mortimer, Engraz, and Leighton.

#### VI. Conclusion

For at least the reasons set forth above, independent claims 39, 67-69, and 78 should be allowable. Dependent claims 40-66 and 70-77 depend from a corresponding one of those allowable independent claims. Consequently, those dependent claims should be allowable for at least the same reasons the independent claims are allowable.

Applicant respectfully requests reconsideration of this application, withdrawal of the claim rejections, and allowance of pending claims 39-78.

If the Examiner believes that a telephone conversation might advance prosecution, the Examiner is cordially invited to call Applicant's undersigned attorney at (404) 653-6430.

Applicant respectfully submits that the Office Action contains a number of assertions concerning the related art and the claims. Regardless of whether those assertions are addressed specifically herein, Applicant respectfully declines to automatically subscribe to them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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